

Draft
Environmental Assessment
for the
Neosho National Fish Hatchery
Pallid Sturgeon Building

Prepared by:

Neosho National Fish Hatchery
U.S. Fish and Wildlife Service
Neosho, Missouri

For:

Region 3
U.S. Fish and Wildlife Service
Ft. Snelling, Minnesota

October 2004

Table of contents

1. Purpose and Needs	
1.1. Purpose for taking Actions	1
1.2. Need for taking Actions	1
1.3. Decisions that Need to be Made	1
1.4. Background	1
2. Alternatives, Including the Proposed Action	2
2.1. Alternative A Construct sturgeon building in Pond 22	2
2.2. Alternative B No Action	3
2.3. Alternative C Construct sturgeon building in Pond 4	3
3. Affected Environment	3
3.1. Physical Characteristics	3
3.2. Floodplain Management	4
3.3. Biological Environment	4
3.3.1. Habitat/Vegetation	4
3.3.2. Listed, Proposed, and Candidate Species	4
3.3.3. Other Wildlife Species	4
3.4. Land Use	4
3.5. Cultural/Paleontological Resources	5
3.6. Local Socio-economic conditions	5
4. Environmental Consequences	5
4.1. Alternative A (Proposed Action)	5
4.1.1. Habitat Impacts	5
4.1.2. Biological Impacts	5
4.1.3. Water Intake and Discharge Impacts	6
4.1.4. Listed, Proposed, and Candidate Species	6
4.1.5. Cultural Resources	6
4.1.6. Public Use	7
4.1.7. Hatchery Operations	7
4.1.8. Environmental Justice	7
4.1.9. Cumulative Impacts	7
4.2. Alternative B (No Action)	8
4.2.1. Habitat Impacts	8
4.2.2. Biological Impacts	8
4.2.3. Water Intake and Discharge Impacts	8
4.2.4. Listed, Proposed, and Candidate Species	8
4.2.5. Cultural Resources	8
4.2.6. Public Use	8
4.2.7. Hatchery Operations	8
4.2.8. Environmental Justice	9
4.2.9. Cumulative Impacts	9
4.3. Alternative C(Construct new pallid sturgeon building in another location)	9
4.3.1. Habitat Impacts	9
4.3.2. Biological Impacts	10

4.3.3.	Water Intake and Discharge Impacts	10
4.3.4.	Listed, Proposed, and Candidate Species	10
4.3.5.	Cultural Resources	10
4.3.6.	Public Use	10
4.3.7.	Hatchery Operations	10
4.3.8.	Environmental Justice	11
4.3.9.	Cumulative Impacts	11
4.4.	Summary of Environmental Impacts	11
5.	List of Preparers	12
6.	Consultation and Coordination with Public and Others	12
7.	Public Comment and Response	12
8.	References Cited	12

Draft

**Environmental Assessment
For
Pallid Sturgeon Building
Neosho National Fish Hatchery**

1. Purpose and Needs

1.1. Purpose for taking Actions

The purpose of this Environmental Assessment is to evaluate the alternatives for increasing the production of endangered pallid sturgeon on the Neosho National Fish hatchery.

1.2. Need for taking Action

Neosho National Fish Hatchery became a member of the Pallid Sturgeon Upper Basin Recovery Team in 2001. At that time the production goals were simply to take excess fish from other facilities and rear as many as possible to nine inches, PIT tag them, and stock them into the Missouri River at decided locations. Since that time however, Neosho NFH has become more involved in the Recovery efforts and has taken on additional responsibilities. Additional Facilities would provide the needed space and water required to increase production to 15,000 nine inch Pallids per year.

At this time, the Neosho National Fish Hatchery has one building dedicated to the hatching and rearing of pallid sturgeon. This building does not provide the necessary rearing space needed to produce the numbers of endangered pallid sturgeon required to meet the production goals assigned by the Pallid Sturgeon Recovery Team. Additional facilities would provide this needed space to reach the new station goals.

1.3. Decisions that Need to be Made

Based on the facts presented herein, the Regional Director of the U. S. Fish and Wildlife Service Region 3, will select one of the Alternatives and will decide whether this Environmental Assessment is adequate to support a Finding of No Significant Impact(FONSI) or if the project is a major Federal Action having major significant effects on the environment, requiring an Environmental Impact Statement(EIS).

1.4. Background

The Neosho National Fish Hatchery is the oldest Federal Fish Hatchery still in operation. Established in 1888, the hatchery is located in the Ozark Mountain Region of southwest Missouri within the town of Neosho. While the main hatchery property is located in Neosho,

Missouri, a 243 acre tract of land(the Elm Springs Unit) is also under it's jurisdiction. The Elm Springs Unit is located approximately five miles southeast of town. It has been operated by Neosho High School under a special use permit since 1961 as a training facility where students can get practical experience in the latest farming methods. Over 40,000 people visit the facility annually. Located not just within city limits; but in the heart of a residential area, it provides countless hours of relaxation as well as entertainment for local residents. The hatchery has produced over 130 different species of fish since it was established. Although capable of producing cold, cool, and warm water species, it now produces cool and cold water fish. The current focus is rainbow trout, pallid sturgeon, outreach and education, and native mussels. Two hundred twenty five thousand statutory mitigated rainbow trout are produced for Lake Taneycomo annually.

In 2000, the U.S. Fish and Wildlife Service issued a Biological Opinion to the Corps of Engineers that stated that certain operations being conducted in the main stem system would likely jeopardize the continued existence of the pallid sturgeon. Identified within the "Opinion" is reasonable and prudent Alternative Element(RPA) VI A specifically related to the recovery needs of the pallid sturgeon. This element focuses on the propagation/augmentation of pallid sturgeon for the Missouri River System.

The Neosho National Fish Hatchery is one of only a handful of facilities that has successfully propagated this unique endangered species. The Neosho NFH has all the unique attributes: including knowledge, specialized equipment, experience, excellent water quality and facilities, as well as the dedicated personnel needed to successfully produce pallid sturgeon. The Corps of Engineers recognized these attributes and has invested heavily in the pallid sturgeon program at Neosho National fish Hatchery; including the expansion of the current sturgeon production building and contributing \$1.6 million towards another building.

2. Alternatives, Including the Proposed Action

2.1. Alternative A(proposed Action)

The U.S. Fish and Wildlife Service's proposed action is to construct a new Pallid Sturgeon propagation building at Neosho National Fish Hatchery. The outside dimensions of the building would be 162' X 73'. The building will contain 32 6' X 24' fiberglass raceways and the associated infrastructure need to provide water to the raceways. In addition to the raceways, there will be approximately 256 sq. ft. of office/lab space and approximately 200 sq. ft. of freezer space. The construction site is an abandoned 1.17 acre pond located at the southeast corner of the hatchery, pond 22. To ascertain the exact location of the building site, a map of the hatchery grounds has been provided in Chapter 3 under "Affected Environment". This location is desirable because it allows easy connection to all utilities and this particular pond is large enough to contain a structure of this size. Fill will be required to bring the site up to the proper elevation. All associated infrastructure will occur within this immediate area. All areas around the new building will be graded and landscaped to prevent erosion and to provide a pleasing atmosphere

to the public. New electrical service, telephone service, and city water will be brought in from the southwest through hatchery property. Normal effluent would be directed to a stream that flows through the property just as the existing hatchery effluent is now. Raceways inside the new pallid sturgeon building would be cleaned once a day to eliminate fish waste, and only during the cleaning process would effluent be directed to the city sewer system. Water for propagation purposes will be obtained by drilling two deep water wells down to the Roubidoux Aquifer. Both wells will be approximately 1200 ft. deep. Each well will utilize a 150 hp, 480 volt three phase motor to pump water to the surface and should produce approximately 600 gallons per minute. Studies were conducted to determine the impact of this removal of water from the aquifer.

2.2. Alternative B(No Action)

Under the no action Alternative, construction would not occur and augmentation numbers would stay at current levels. Any augmentation would be an improvement to wild populations; but unfortunately because numbers in the wild have reached such a critical low, present levels of augmentation would not be sufficient to prevent this species from going extinct. This was the main reason that each of the facilities on the pallid sturgeon recovery team was asked to increase production. Consequently, funds already made available to the U.S. Fish and Wildlife Service for the construction of a new building would have to be returned to the Corps of Engineers.

2.3. Alternative C(Construct the new pallid sturgeon building in another location)

Space is very limited at the Neosho National Fish Hatchery. There is only one other location that could be considered, Pond 4. Pond 4 is located at the northeast corner of the property. The exact location is shown on the map of hatchery property found in Chapter 3. This location would be closer to the rail road and closer to a major highway as well. Both might cause additional stresses to this very sensitive species; but for purposes of this EA, this action will be fully evaluated and presented to the public for comment and to the Regional Director for a decision. Also, the relative closeness to the rail road may require additional structural design to the building and all other associated infrastructure. This location is also an abandoned pond; but a considerably smaller area(only .5 acre) than the preferred location, which is a 1.17 acre pond. If the new building was constructed in pond 4, the source of water would be the same as described in Alternative A. The water effluent would also be treated the same as in Alternative A. Pond 4 is much farther away from the stream however and the effluent line would have to be routed around other ponds and other water lines causing additional logistical problems.

3. Affected Environment

3.1. Physical Characteristics

Neosho National Fish Hatchery consists of a 16 acre tract of land within city limits that contain eight ponds and 18 concrete raceways. The hatchery also owns 243 acres located approximately five miles southeast of town. The Neosho area soils are well drained; consisting of bedrock, limestone, dolomite, and shale. Limestone is the predominate rock type, making caves quite common in the area. There are 21 named caves in Newton County alone. Some fossil fuels are

present in the region. Coal was strip-mined in the past and the oil rich asphaltic sandstones of southwest Missouri are at estimated to have a 10 to 50 billion barrel potential. The landscape of the area is characterized by gently sloping to moderately steep ridgetops with numerous drainage ways and small stream bottoms. The soils are very permeable consisting of loamy surface layers and sub soils with chert. The soils are best suited agriculturally for grass, alfalfa, and other legumes, and small grain crops. The topography of the hatchery (in town) itself gradually slopes to the northeast, and is surrounded by hills. The hatchery soil is red clay, with gravel subsoil. The elevation of the hatchery is 1,026 feet MSL. The elevation of the building will be 1,032 feet MSL.

3.2. Floodplain Management

The FEMA Map shows that the Neosho National Fish Hatchery lies within the 1031' flood contour. Fill would be brought in to bring the elevation of the area up to a level above floodplain.

3.3. Biological Environment

3.3.1 Habitat/Vegetation

Current habitat at the proposed building site consists of grasses, small shrubs, leaves and small trees. Immediately to the north of the site is Pond 20, a production pond that is usually filled with water. Immediately to the south and east is a residential area, and to the west the hatchery shop and other hatchery buildings. All hatchery areas are generally kept neatly mowed.

3.3.2 Listed, Proposed, and Candidate Species

The Qzark Cavefish is the only endangered species present on the hatchery. Although cavefish are known to exist on hatchery property, none are found in the immediate area. The cavefish are found in a single spring that supplies water to the hatchery at the southwest edge of the property.

3.3.3. Other Wildlife Species

Habitats at the proposed site are used primarily by songbirds, small mammals, and several neighborhood cats. A resident hatchery duck population uses some of the surrounding hatchery ponds, but are seldom seen at the proposed site.

3.4. Land Use

Neosho National Fish Hatchery is located totally within the city limits of Neosho, Missouri. It consists of eight ponds; some in use and some not in use, and 18 concrete raceways. The area completely around the hatchery is residential.

3.5. Cultural/Paleontological Resources

The presence of limestone bedrock could be indicative of the potential for paleontological resources but no information is available about the presence of paleontological resources in or around the Hatchery.

Little information is readily available about cultural resources and historic properties. The Nation Register of Historic Places lists six properties in Newton County, of which three are in the town of Neosho. No prehistoric or historic archeological sites are known within one mile of the hatchery, although the Missouri State Historic Preservation Officer considers the area to have archeological potential. The SHPO considers the Neosho Nation Fish Hatchery to be eligible for the National Register based on its 1888 construction date and being the oldest operating Federal Hatchery, the hatchery also has stonework elements from the 1930s created by the Civilian Conservation Corps. The hatchery was largely reconstructed in 1961 with new buildings and reconfigured ponds.

3.6. Local Socio-economic conditions

The proposed endangered pallid sturgeon building site is located within Newton County, Missouri. Newton County comprises 627 square miles, with a population of 54,463. Median household income is \$ 44,503.

4. Environmental Consequences

4.1. Alternative A (Proposed Action)

4.1.1. Habitat Impacts

Habitat impacts would be minimized under this alternative. Current habitat at the site consists of grasses, shrubs, excess top soil, leaves and small trees. The entire proposed pallid sturgeon building and associated infrastructure would be located within the confines of an unused hatchery pond. The entrance road to the building will be designed to minimize the amount of disturbance to the area. The area surrounding the building will be graded and landscaped. Native trees and shrubs will be planted around the site to create a visually appealing landscape. Storm water and runoff from the building will be routed from the building to the stream via an existing structure on the north side of the pond.

4.1.2. Biological Impact

Biological impacts would be minimized under this alternative. The new pallid sturgeon building and associated infrastructure will be placed within an existing unused pond. Habitat outside of the existing pond walls will be largely undisturbed. Some minor displacement of mammals and reptiles will occur.

The Biological Impact to pallid sturgeon populations would have a positive affect. Pallid sturgeon populations are at such a low at this time that any addition augmentation to wild populations would definitely decrease the chances of this Endangered Species going extinct.

4.1.3. Water Intake and Discharge Impacts

Several contacts were made regarding groundwater conditions in and around the Neosho area, but the two primary contacts were Cynthia Brookshire of MO DNR Geologic Survey Research and Assessment Division, and Mike Hitower of the City of Neosho water plant. Brookshire stated that several subsurface investigations and subsequent groundwater survey had been performed around the Neosho area and that there were two aquifers located near Neosho at depths of 200 to 300 feet and from 1200 to 2000 feet. For a high-yield well, the deeper aquifer would need to be tapped. Hitower stated that he was sure that the water was available, and that the City of Neosho had three Wells at 1200 feet. He seemed to concur with Brookshire that plenty of groundwater was available in the Neosho Area. When asked about the cone of depression and how pumping rates would affect the commercial wells, Howtower was uncertain of any influence. He did however suggest that two new deep water wells at the Neosho Nation Fish Hatchery might cause the city to increase pumping rates to obtain the same volume of water. Given the understanding of the local hydrology, Brookshire estimated that multiple wells would be required to generate the 600 to 1000 gpm design flow rate at Neosho National Fish Hatchery. Brookshire also stated that MO DNR aquifer studies suggested that as the demand of the aquifer increases, increased pumping rates would be required to extract the groundwater.

The increased effluent water discharged into the branch flowing through the hatchery, would have no negative effects. In times of drought conditions however, this added flow would help keep some portions of the branch from going dry.

4.1.4. Listed, Proposed, and Candidate Species

Consultation with the Service's Columbia MO Ecological Service Office indicates that the Ozark Cavefish would not be affected under this alternative as indicated on the attached Intra-Service Section 7 consultation form.

4.1.5. Cultural Resources

The areas of potential effect for the preferred action alternative in terms of project impacts on cultural resources including historic properties are defined as (1) the 1.17 acre pond 22 and (2) a surrounding viewshed for historic buildings and other structures where the setting of the historic property could be compromised by the new construction of the pond, significant archeological resources in scientifically meaningful context are not likely present. Prior consultation regarding the buildings on three nearby lots have determined that none meet the criteria for the National Register of Historic Places and no buildings within the viewshed of the new construction appear to meet the National Register Criteria. Consultation with the Missouri State

Historic Preservation Officer is necessary to consider impacts of the undertaking on Historic properties.

4.1.6. Public Use

Approximately 40,000 people visit the Neosho National Fish Hatchery Annually, and a considerable amount of those visiting come in tour groups. The pallid sturgeon are quite an attraction and most of the tour groups are interested in the endangered pallid sturgeon, and ask to see those facilities. If the new pallid sturgeon building is constructed, we anticipate increased interest in the program and thus increased public use.

4.1.7. Hatchery Operations

Much needed freezer space and lab space is planned into the design of the new pallid sturgeon building. Different facilities are feeding different diets, but at Neosho National Fish Hatchery, pallid sturgeon are fed bloodworms almost exclusively during grow out. Current plans include two walk in freezers to store supplies of bloodworms and other supplies that need to be refrigerated or frozen, and a heated lab/office to store and use equipment that should not be exposed to the high humidity and low temperatures that would occur in the production portion of the building. As it stands now, if a large order of bloodworms arrives and it exceeds the limited freezer space, they are stored at a state facility approximately one hour away from the Station.

4.1.8 Environmental Justice

This alternative would have positive impacts on low-income or minority populations. The new pallid sturgeon building would provide additional free educational and interactive resource viewing opportunities. These resources are within a short driving distance of low-income and minority populations of Newton, McDonald, Jasper, Ottawa, and Barry Counties. The increased work load may also provide temporary employment opportunities.

4.1.9 Cumulative Impacts

No long term cumulative impacts would occur to cultural resources or to listed, proposed, or candidate species due to activities associated with this alternative or similar actions by the Service or other agencies working under the direction of the Service. If this alternative is implemented along with other actions at other facilities and combined with habitat improvement, the hope is that pallid sturgeon populations can stabilize and increase.

4.2 Alternative B(No Action)

4.2.1. Habitat Impacts

No new development would occur. There would be no impacts to existing habitats from construction activities. Habitat restoration, grading, and landscaping activities would not take place.

4.2.2. Biological Impacts

No impact to wildlife or the resources would occur due to construction activities. The proposed construction site would remain in its present condition.

Pallid sturgeon production would remain at present levels and no additional augmentation above the current production levels of pallid sturgeon populations would occur under this alternative. The likelihood of this species going extinct would increase over time because current stocks are aging and spawning activities and fecundity will continue to decline as age increases.

4.2.3. Water Intake and Discharge Impacts

Under this alternative, there would be no new deep water wells drilled on the property; so there would be no effects to the aquifer that the water is being extracted from of the stream that the discharge water would be going to.

4.2.4. Listed, Proposed, and Candidate Species

There would be no effect to Listed, Proposed or Candidate Species.

4.2.5. Cultural Resources

No Cultural resources including historic properties would be affected under this alternative.

4.2.6. Public use

Public use would continue at present levels and tours would continue, to view the available fish on station.

4.2.7. Hatchery Operations

No new pallid sturgeon building and the associated freezer, office/lab space would not be acquired. Pallid sturgeon argumentation numbers would stay at present levels. Hatchery staff would continue to store bloodworms off station and moisture and temperature sensitive equipment would continue to be stored at the hatchery office building.

4.2.8. Environmental Justice

This alternative would have no impact on low-income or minority populations

4.2.9. Cumulative Impacts

No long term cumulative impacts would occur to cultural resources, or to proposed, listed or candidate species due to activities associated with this alternative or similar actions by the Service or other agencies working on behalf of the Service.

No habitat would be lost or converted to any other condition under this alternative.

There would be no long term negative cumulative impacts to public use, the amount of public use facilities, and environmental education resources and opportunities due to alternatives associated with this alternatives of similar action by the Service or other agencies.

There are potential negative impacts to the pallid sturgeon. If production is not increased here, and at other hatcheries being considered, pallid sturgeon numbers will probably continue to decline.

4.3. Alternative C(construct new pallid sturgeon building in another location)

4.3.1. Habitat Impacts

Habitat impacts would be greatest under this alternative. This site is also an abandoned unused pond similar to the preferred site, but much smaller in size. Pond 22 covers 1.17 acres and Pond 4 covers .5 acres. Because of the dimensions of the proposed building, the entire building would not fit within the pond boundaries. Additional space outside of the pond boundaries would be needed to construct the building at this location. A paved walking trail passed very close to the pond edge. This path would have to be redirected if this area were needed for the building. This site is also only a few feet from pond 7. A visual inspection of the hatchery map included in this document will illustrate the close proximity of these two ponds. The entire area would be very congested. Because the area is more developed than the proposed site there would be more obstacles to avoid with incoming water, electrical, sewer and effluent water lines. This site is adjacent to a major highway which serves as a truck route through town. It's also adjacent to the railroad. The relative closeness to the railroad may require additional structural design to the

proposed building. Pallid sturgeon are very sensitive fish and the added stresses may affect their behavior.

Future Expansion plans include the construction of a new state of the art Visitor's Center to the east of this location. If the new VC is constructed in the proposed location, pond 4 will be used for parking and interactive displays.

4.3.2. Biological Impacts

Biological Impacts would be similar to Alternative A. The pond is always neatly mowed because of high public use in this area. The habitat at this area is used mainly by songbirds, and small mammals.

4.3.3 Water Intake and Discharge Impacts

Water intake and discharge impacts would be identical to Alternative A.

4.3.4 Listed, Proposed and Candidate Species

Consultation with the Service's Columbia MO. Ecological Services Office indicates that the Ozark Cavefish would not be affected under this alternative as indicated by the attached Intra-Service section 7 consultation form.

4.3.5. Cultural Resources

For the action alternative of constructing the pallid sturgeon building in pond 4 at the northeast corner of the Hatchery, the area of potential effect would be similar to the preferred alternative. Construction of pond 4 likely disturbed archeological sites if any were present. Buildings and structures within the viewshed of pond 4 are unlikely to be eligible for the National Register, although more analysis is probably necessary. If this alternative is selected, consultation with the Missouri State Historic Preservation Officer is necessary.

4.3.6 Public Use

Public use under this alternative would be very similar to that of the preferred alternative. The difference would be that the current walking path would have to be rerouted somehow.

4.3.7. Hatchery Operations

Cold and Frozen storage space considerations under this alternative are identical to those in Alternative A.

4.3.8. Environmental Justice

This impact would have positive impacts on low-income or minority populations. The new pallid sturgeon building would provide additional free educational and resource viewing opportunities. This resource is within a short driving distance to low income and minority populations in Newton, McDonald, Jasper, Barry, and Ottawa Counties. The increased workload may provide part time employment opportunities.

4.3.9. Cumulative Impacts

No long term cumulative impacts would occur to cultural resources or to listed, proposed, or candidate species due to activities associated with this alternative. This area is currently groomed and mowed as are other hatchery grounds.

The effect on public use, the amount of public use facilities, and environmental education and outreach opportunities would be the same as the preferred alternative under this alternative. The Impacts to pallid sturgeon would be positive. Augmentation numbers would be increased, and any increases to wild populations would decrease the chances of this species going extinct.

4.4. Summary of Environmental Impacts

Impacts	Alternative A (Build new pallid sturgeon building in Pond 22)	Alternative B (No Action)	Alternative C (Build new pallid sturgeon building in another location)
Listed Species other than pallid sturgeon	None	None	None
Impact on cultural/historic resources	None anticipated consultation with MO SHPO ongoing	None	None anticipated
Habitat Impacts	Grass, shrubs, small trees will be lost	None	Grass, shrubs will be lost
Cumulative Impact on pallid sturgeon population	Positive, an increase in fish propagated and stocked. May stabilize or increase wild populations.	Negative, propagation numbers will remain the same. May not stop decline in pop.	Positive, an increase of fish propagated and stocked. May stabilize or increase populations.
Public use	40,000+ annually	40,000	40,000 + annually
Water consumption	Larger demand on aquifer, but no negative impact anticipated	None	Larger demand on aquifer, but no negative impact anticipated
Water effluent	Increased flow in branch. Positive	None	Increased flow in branch. Positive

	impact, branch presently dries up during dry periods		impact, branch presently dries up during dry periods
Environmental Justice	Positive	None	Positive
Future Visitor's Center	Would combine to make this a more attractive visit	Would neither add nor detract	While helping to attract visitors, would interfere with plans for the VC
Biological Impacts at site	Very minimal	None	Very Minimal

5. List of Preparers

The following individuals cooperated in the preparation of this document:

Roderick May, Asst. manager, Fishery Biologist, USFWS, Neosho National Fish Hatchery, Neosho MO.-author, research, data collection, and editing

Jeff Gosse , Regional Environmental Coordinator, USFWS Ecological Services Region 3 Regional Office, Fort Snelling, Minnesota-Gave the author guidance in FWS procedures for preparation of NEPA documents, editing, and revision

David Hendrix, Hatchery Manager, Fishery Biologist, USFWS, Neosho National Fish Hatchery-helped the author with research, provided guidance and encouragement

6. Consultation and Coordination with Public and Others

Cynthia Brookshire of MO DNR Geologic Survey Research and Assessment Division

Mike Hightower of the City of Neosho

Neosho Chamber of Commerce and the University Extension service provided information on Newton County statistics.

David Whitson of University of Missouri outreach & Extension

7. Public Comment and Response

This chapter will be completed following the public comment period.

8. References Cited

Neosho National fish Hatchery Public Use Plan

Ayers and Associates research finding report

Fishpro/Crochran & Wilken research finding report.

FEMA Map

MO .Department of Natural Resources